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Guardian™ 500 Airflow Monitor Kit No 3944700 or 3944701

The Guardian 500 Airflow Monitor is designed to continuously monitor airflow through enclosures and fume hoods. This permanently installed device provides both visual and audible alarms to alert the user of abnormal airflow conditions. A green light on the front of the monitor indicates normal flow conditions. When flow conditions lower than the set point are encountered, a flashing red light is activated along with an audible alarm. To temporarily mute the audible alarm, press and release the test/reset button. The Guardian 500 Airflow Monitor has a built-in sensor, 3 relay inputs and 1 relay output. The relay inputs can be configured for night setback, external alarm, and sash high alarm. The night setback features disables the alarm. The relay output is configured for Low Air Alarm.

Component Identification

- | | |
|-----------------------------------|---|
| 1. Air Inlet | A portion of the air coming into the enclosure passes through the air inlet and across the flow sensors. |
| 2. Normal Flow Indicator | This green light indicates normal flow conditions. |
| 3. Alarm Indicator | This red light is activated approximately 10-30 seconds after the low flow set point is reached. Low flow set points are 10-20 fpm below normal flow. |
| 4. Mute Button | If no alarm is present, this button will cause the red lamp to light and the audible alarm to sound. If an alarm is present, the button will silence the audible alarm. |
| 5. Adjustment for Alarm Set Point | This potentiometer is used to set the low flow indicators for the alarm. It is adjusted with a small screwdriver. |

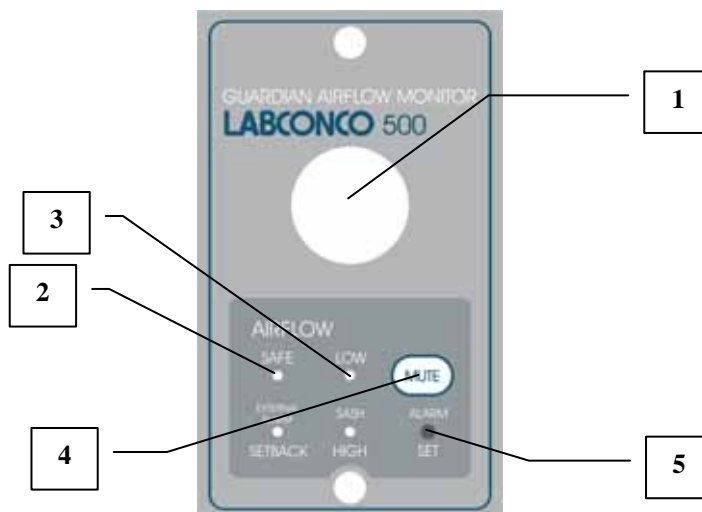


Figure 1
Component Identification

Installation Procedure

1. The enclosure comes prepared to except the Guardian™ 500 Airflow Monitor.
2. First remove the large 1.19" dia. gray hole plug. See Figure 2. See Figure 3 only to reference internal assembly of the airflow monitor. Locate the elbow, locknut, and washer and install it in the 1.19" dia. hole per Figure 2 and Figure 3. The enclosure baffle pivots down to install the elbow, washer and locknut.
3. Cut the 1" hose supplied with the kit to 15.5" approximate length and install it between the airflow sensor and the elbow.
4. Secure the Guardian 500 Airflow Monitor to the enclosure with double stick tape as shown in Figure 4. The airway passage between the alarm module and the enclosure is now complete.
5. Locate the metal hose cover and install with double stick tape per Figure 4. (Omit this step on the Protector Work Stations.)
6. Locate the power supply transformer. One end should already be connected to the two-pin connector labeled 15 VDC on the back of the alarm module and through the strain relief bushing. If disconnected, then reconnect to power the airflow monitor. Plug the 115V power supply into a standard 115V duplex receptacle, the back of the accessory FilterMate portable exhauster or the back of the accessory light. For 230V, plug into a standard receptacle with your specific outlet plug. **(It is recommended that the airflow monitor be connected directly to the FilterMate switched auxiliary outlet so the airflow monitor is powered at the same time.)**
7. Installation is now complete.

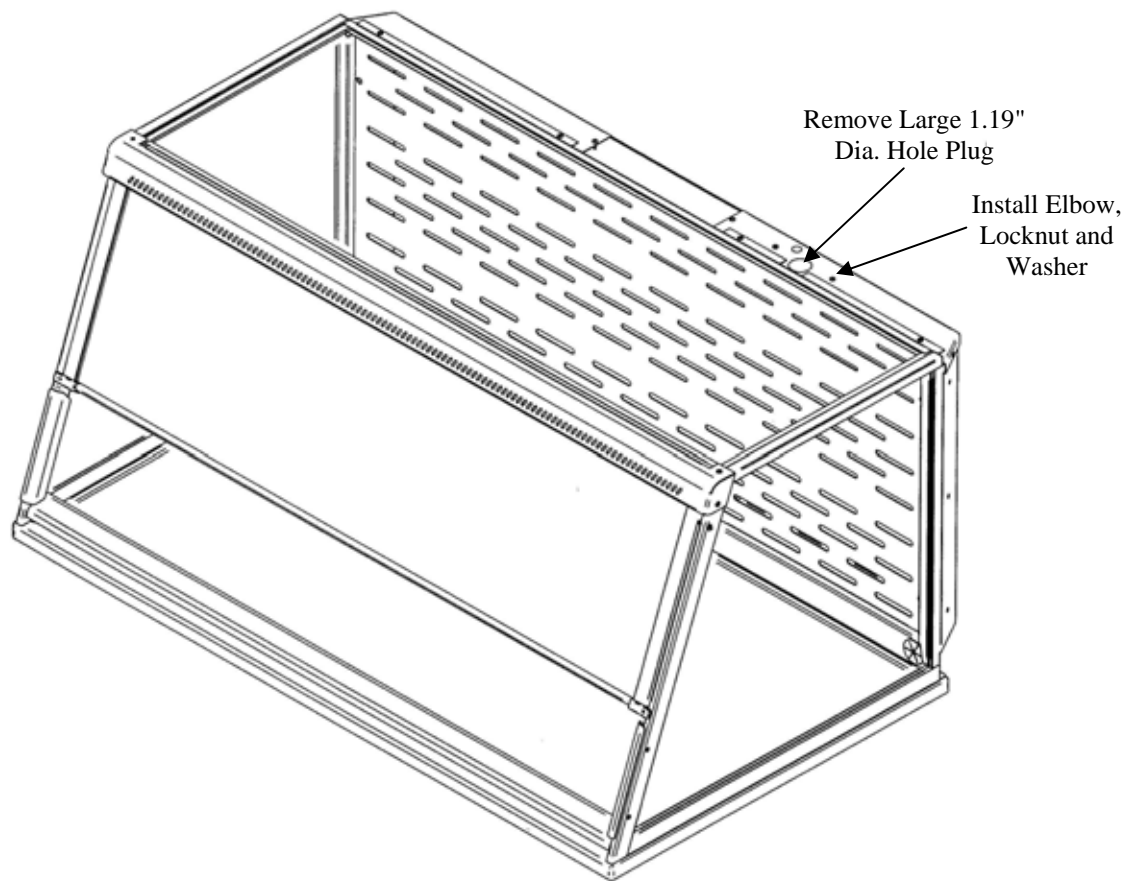


Figure 2
Hole Plug and Mounting Screws Location

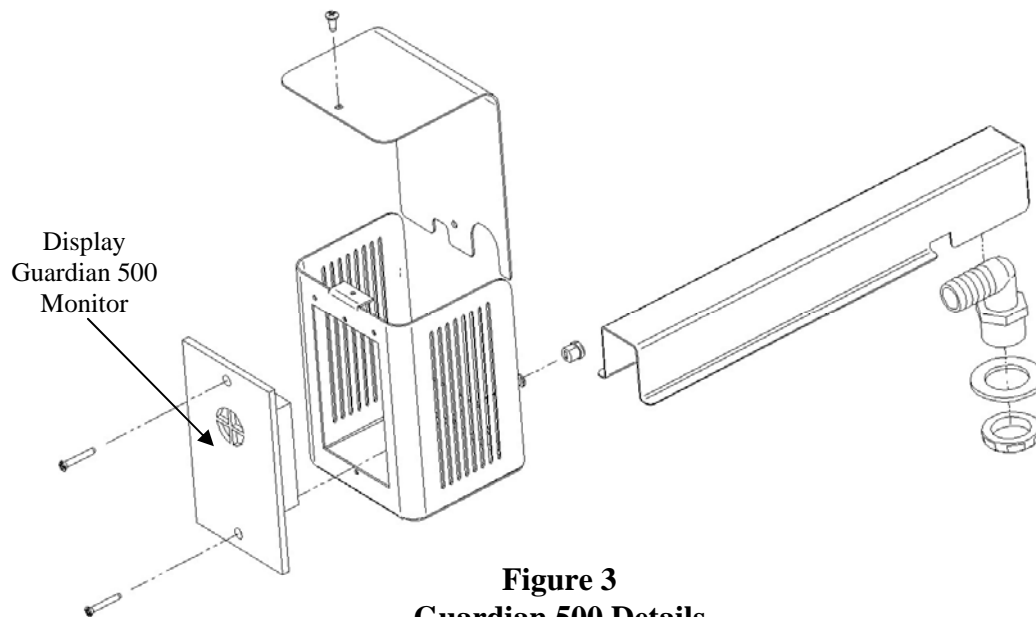


Figure 3
Guardian 500 Details

Calibration Procedure

Each alarm module and enclosure/fume hood is unique and needs to be individually calibrated in the field. The procedure for the adjustment is as follows:

1. Double check the installation to make sure that monitor and power supply are properly installed.
2. Allow 10 minutes for the monitor to warm up once power has been connected.
3. Determine the low flow set point for your monitor. This is the value where the monitor will first indicate a low flow condition. The red light will be on for this value. Refer to your industrial hygiene officer for the proper low flow set point or consult the table below.
4. Adjust your enclosure/fume hood airflow to the low flow set point as previously determined. The exhaust flow can be lowered by adjusting the speed control on the FilterMate or by using an adjustable damper on the exhaust blower. Typical alarm conditions are set at face velocities of 10 to 20 feet per minute below the normal operating conditions due to supply air and exhaust air fluctuations, as well as room air cross drafts. See note 8 if the low airflow volume or sash opening cannot be adjusted.
5. Using a properly calibrated thermoanemometer, determine the velocity through the face of the enclosure by taking a detailed velocity traverse. Divide the face area into equal increments. One reading per square foot of face area is normally recommended for an accurate traverse. Compute the average velocity for this area.
6. If the red light alarm is on, slowly turn the adjustment screw counterclockwise until the green light is activated. If the green light is on, slowly turn the adjustment screw clockwise until the red light comes on. Slowly turn the adjustment screw back until the red light is activated. It is important that these adjustments be done in small increments, at intervals about 30 seconds apart to allow for delayed reaction of the alarm itself. The alarm low flow set point should now be set and the red light activated.
7. Readjust the enclosure airflow to its normal operating levels. The green light should now be activated. Calibration is now complete.

Enclosure Operating In Flow Speed	Alarm Condition Set Point Speed
100 fpm	80 - 90 fpm
80 fpm	60 - 70 fpm
60 fpm	40 - 50 fpm

8. Note: If the low airflow volume or sash opening cannot be adjusted, then a 1/4 to 1/3 of a turn counterclockwise can be adjusted to set the airflow alarm condition at 10-25% below normal operating levels.

Guardian 500 Alarm Activation

The audio and visual alarm will activate approximately 10-30 seconds after an alarm condition is detected. To temporarily mute the audible alarm, press and release the test/reset button.

NOTE: After an alarm condition has been detected, the red light will stay on. The audible alarm will remain muted until airflow returns to normal levels.

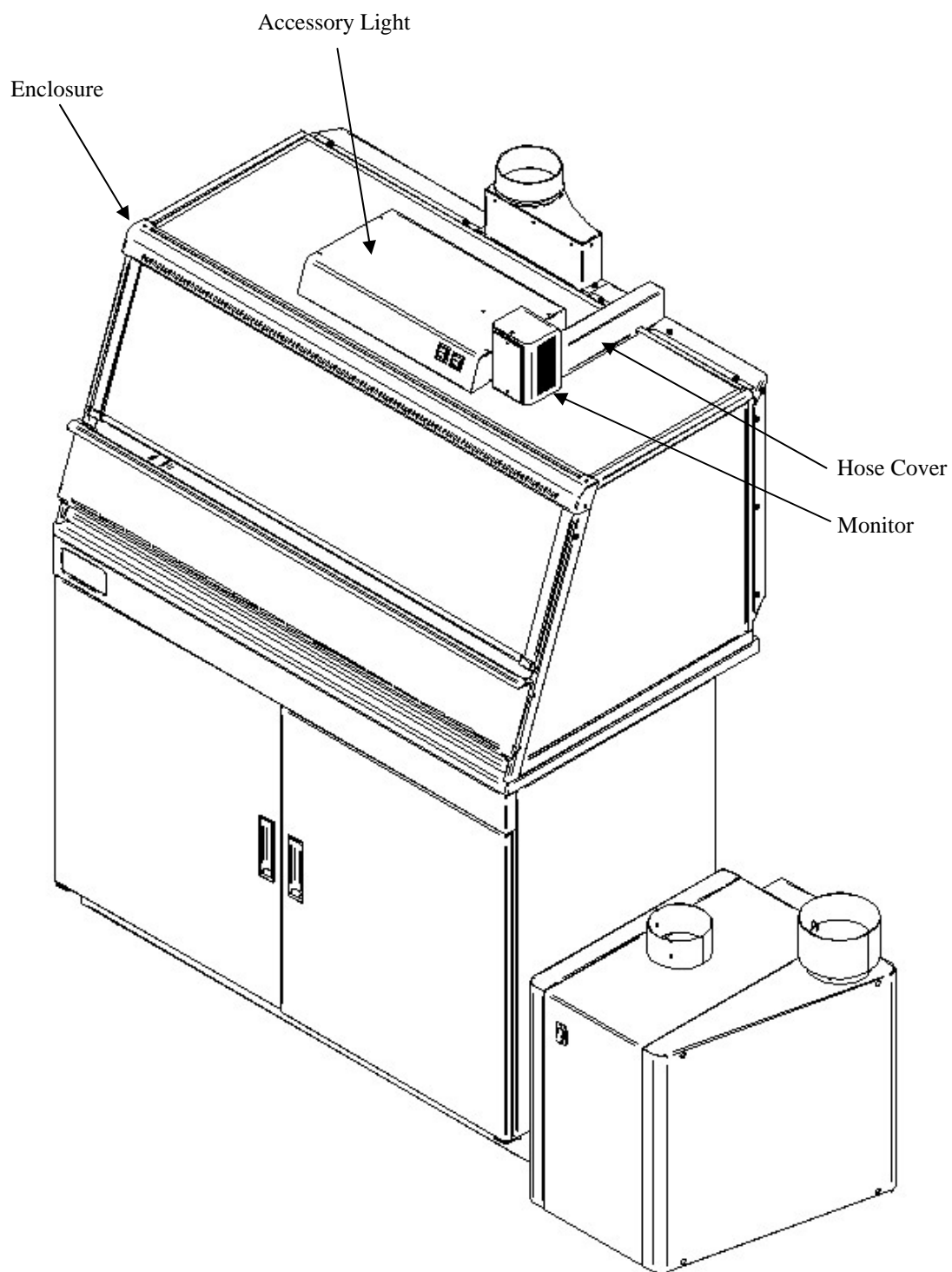


Figure 4
Guardian 500 Installation

Warranty

Labconco provides a warranty on all parts and factory workmanship. The warranty includes areas of defective material and workmanship, provided such defect results from normal and proper use of the equipment.

The warranty for all Labconco products will expire one year from date of installation or two years from date of shipment from Labconco, whichever is sooner, except the following;

- Purifier® Logic® Biological Safety Cabinets and PuriCare® Lab Animal Research Stations carry a three-year warranty from date of installation or four years from date of shipment from Labconco, whichever is sooner.
- SteamScrubber® & FlaskScrubber® Glassware Washers carry a two-year warranty from date of installation or three years from date of shipment from Labconco, whichever is sooner.
- Blood Drawing Chairs carry a ten year warranty.
- Carts carry a lifetime warranty.
- Glassware is not warranted from breakage when dropped or mishandled.

This limited warranty covers parts and labor, but not transportation and insurance charges. In the event of a warranty claim, contact Labconco Corporation or the dealer who sold you the product. If the cause is determined to be a manufacturing fault, the dealer or Labconco Corporation will repair or replace all defective parts to restore the unit to operation. Under no circumstances shall Labconco Corporation be liable for indirect, consequential, or special damages of any kind. This statement may be altered by a specific published amendment. No individual has authorization to alter the provisions of this warranty policy or its amendments. Lamps and filters are not covered by this warranty. Damage due to corrosion or accidental breakage is not covered.

Returned or Damaged Goods

Do not return goods without the prior authorization from Labconco. Unauthorized returns will not be accepted. If your shipment was damaged in transit, you must file a claim directly with the freight carrier. Labconco Corporation and its dealers are not responsible for shipping damages.

The United States Interstate Commerce Commission rules require that claims be filed with the delivery carrier within fifteen (15) days of delivery.

Limitation of Liability

The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state, or local regulations. All users of this equipment are required to become familiar with any regulations that apply in the user's area concerning the dumping of waste materials in or upon water, land, or air and to comply with such regulations. Labconco Corporation is held harmless with respect to user's compliance with such regulations.

Contacting Labconco Corporation

If you have questions that are not addressed in this manual, or if you need technical assistance, contact Labconco's Customer Service Department or Labconco's Product Service Department at 1-800-821-5525 or 1-816-333-8811, between the hours of 7:00 a.m. and 6:00 p.m., Central Standard Time.